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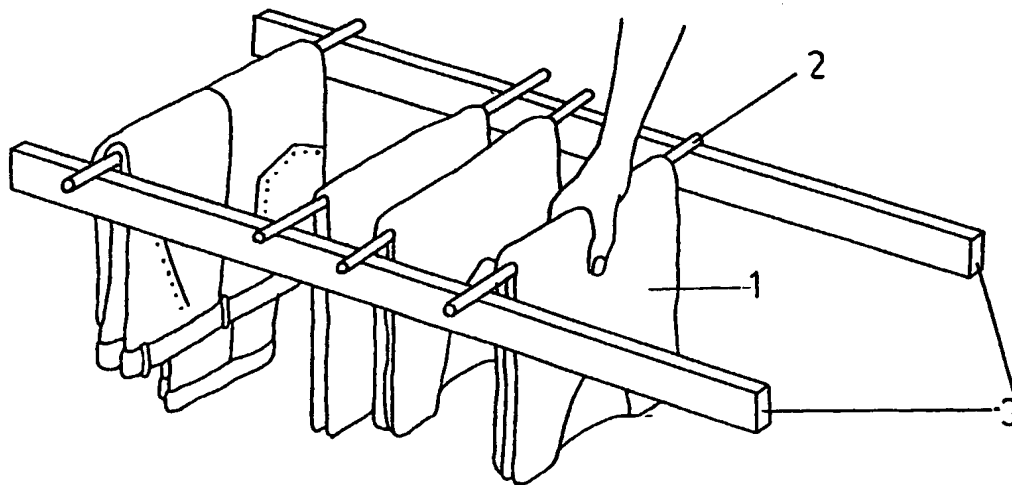
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- (71) Applicant and
(72) Inventor: ESCATLLAR ZUNZUNEGUI, Jorge
[ES/ES]; Psg. Joan de Borbo 80-84, C-3-4, E-08003
Barcelona (ES).

(54) Title: CLOTHES FILE CONCEPT AND CLOTHES-FILING HANGERS



(57) Abstract: A method of storing clothes (1) mainly in closets, wardrobes, chests of drawers, racks or trunks in which garments and other pieces of cloth like T-shirts, sweaters, pants or trousers, towels, sheets, table clothes, etc, are folded and suspended from horizontal rods, bars, sticks (2), etc, that are stored on guide rails (3), as if they were folders in a filing cabinet. Includes several designs of such clothes hangers and rail systems that are useful at home, shop display or industrial clothes logistics and stocks.

CLOTHES FILE CONCEPT AND CLOTHES-FILING HANGERS

This invention is directed to systems for storing clothes mainly in clothes closets or in shop display, and is particularly directed to a method of suspending clothes and its related embodiments.

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BACKGROUND OF THE INVENTION

Most closets include a clothes bar with hangers and maybe some parallel fixed rods for suspending pants, while many of the garments are folded and piled up in shelves or drawers.

10 Closets low part is usually filled up with drawers in which search of a garment could mean several drawer openings and a lot of rummaging about in an uncomfortable posture.

A more practice way of storing such folded clothes is highly desirable, in which the pieces could be seen in detail and removed or stored easily and comfortably, also when used in the low part of closets.

15 SUMMARY OF THE INVENTION

The present invention is directed to a method and related elements for storing clothes, which provide said desirable features. Some clothes hanger systems and hanger designs are included as embodiments of the invention. Some solutions are provided for adapting said hanger systems to some
20 different closet organizing systems, trunks and racks for shop display. The generic concept and the detailed solutions of this invention can be easily and better understood through the accompanying figures and following descriptions of the method and preferred embodiment.

IN THE DRAWINGS

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FIGS. 1 to 5 are all of them top plan views of a garment having sleeves that lays on a flat surface on which it is being folded, with a bar next to it.

FIG. 6 is a top plan view of the garment of FIGS. 1 to 5 on which the bar has been positioned.

FIG. 7 is a top plan view of the garment of FIG. 6 in which it has been folded around the bar.

30 FIG. 8 is a perspective view of the garment of FIG. 7 in which it is being pressed by hand.

FIG. 9 is a perspective view of a clothes storing system or bar system into which the garment of FIG. 8 is being placed.

FIG. 10 and 11 are top plan views of a pair of pants laying on a flat surface on which it is being folded, and a bar next to it.

35 FIG. 12 is a top plan view of the pants of FIGS. 10 and 11 on which the bar has been positioned.

FIG. 13 is a perspective view of a clothes-filing hanger or bar without any union means.

FIG. 14 is a perspective view of a bar having hooks in both ends.

FIG. 15 is a perspective view of a bar having wheels in both ends.

FIG. 16 is a perspective view of a bar without union means and a bridge into which the bar can be fitted.

FIG. 17 is a perspective view of a bar with hooks entirely made of sheet metal.

FIG. 18 is a perspective view of a bar having notches next to both ends and a striated surface.

5 FIG. 19 is a perspective view of a bar with some underwear on it.

FIG. 20 is a cross sectional view of a rail having various flanges.

FIG. 21 is a cross sectional view of a hanger system in which a hanger or bar is being positioned onto the rails.

10 FIG. 22 is a cross sectional view of a hanger system in which the bars can be fitted both from above or under the rails and include a vertical handle in one end.

FIG. 23 is a perspective view of two different pieces that can be added to the frame to avoid the clothes projecting outwards when the system is overloaded.

DESCRIPTION OF THE METHOD

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In brief the present invention provides a method of storing folded pieces of cloth in vertical position instead of flat. For doing so, some detached and elongated support pieces, in the following called clothes-filing hangers or bars, are used from which the folded pieces of cloth are suspended. Said bars are for example pieces of straight rod, bar, profile, tube, stick or the like. Garments having sleeves, like sweaters, shirts, T-shirts, etc, are suspended as follows:

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- on a flat surface the garment is spread and
- folded by putting the sleeves inwards and along its back as usually done,
- a bar is positioned onto the garment approximately in the middle with both ends projecting outwards,
- 25 • the garment is folded around the bar,
- garment and bar are held by hand together and raised up with the bar in horizontal position and the piece of cloth hanging both sides in approximately same portions.
- finally, the bar is horizontally positioned on a pair of parallel and preferably horizontal rails as if it was a folder in a filing cabinet, by positioning each end of the bar onto each rail.

25

30 Garments are thus folded in the usual way but stored in vertical position, suspending from their corresponding bars. FIGS. 1 to 5 illustrate said usual way in which a piece of cloth 1 is folded with the sleeves on its back. A bar 2 is next to said piece for calculating a suitable folding size slightly smaller than the length of the bar. In FIG. 6 the bar 2 has already been positioned on the piece of cloth 1, while in FIG. 7 the piece has already been folded around the bar 2. Afterwards, the piece of cloth can be slightly pressed by hand as in FIG. 8, before placing it in the rails 3 as shown in FIG. 9. Long pants, and also long towels, can be folded as seen in FIGS. 10 to 12 to match the size of the other garments when suspended. In FIG. 11 the pants are seen folded to have a length at least slightly shorter than 2/3 of the pants length, so that when the bar 2 in FIG. 12 is positioned onto the middle of

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the folded pants, it is laying on the low part of the pants. Underwear and bathing suits can be hung by passing the bar 2 through them as shown in FIG. 19.

The pieces of cloth of the kind of towels, sheets or tableclothes are folded to have a width slightly shorter than the length of the bar and then folded over the bar directly or following said case of long pants. In fact, these clothes are sold packed in approximately same size than folded T-shirts or sweaters. All pieces of cloth thus can be stored hanging down same height from their bars for space saving.

DESCRIPTION OF THE PREFERRED EMBODIMENT

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As shown in FIG. 9 the preferred embodiment of this invention is a clothes storing system in which some detachable and elongated support pieces, in the following called clothes-filing hangers or bars 2, are positioned on a pair of parallel and levelled elongated supports, in the following called rails 3. Thus, the generic preferred embodiment is the combination of bars and horizontal rails, along which the bars can ride.

15

The clothes-filing hanger or bar must have a straight central portion from which the piece of cloth is suspended. This central portion can be made of any straight and elongated piece, having preferably a round section in the upper part. Said piece can be made of bar, tube, plate, inverted-U profile, etc. and almost of any material like wood, metal, plastic, bamboo, etc. It must have a length enough to house all of the different types of designated clothes. For an average clothes closet, this length of the central portion may range from 12 to 14 inch. or 30 to 35 cm. It may have a non-slipping finishing for the clothes not to fall off from the bar. In most cases, bars having union means engaging the rails are more practical than without them. The rails must be parallel to each other and levelled. They could be vertical, but mainly they are horizontal and suitably shaped for the bars to ride or slide along them.

25

A further in detail preferred embodiment of this invention is the combination illustrated in FIG. 21 wherein a bar 2 having notches, like the one shown in FIG. 18, is positioned on a frame 13 or drawer having a pair of Z-shape rails 12 made of sheet metal. The rails in this case are mounted along the front and back walls of the frame or drawer. For an easier positioning of the bar onto the rails, it is first guided against the front wall of the frame 13 and later guided down onto the rails. The frame here is meant to be made of board or wood just like a drawer without bottom plate, but it could also be a drawer tall enough to house the folded garments suspending from the bars. Extendible versions of frames entirely made of sheet metal and available in the market of filing cabinets are also useful within the present invention. All these frames or drawers are mainly meant to be mounted on full extension runners, so that the system can be pulled out just like any other drawer. FIG. 18 shows a bar 2 having notches 9 next to both ends. These notches are meant to engage the rails and avoid falling of the bar when riding along them. Optionally, other notches could be added facing upwards and matching the shown ones that are facing downwards. Many bars, tubes, plates or profiles made of

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wood, metal, bamboo, plastic, etc, are useful for manufacturing this bar, preferably of 0,3 to 0,4 inch. or 8 to 10 mm. of thickness. When using thinner bars the clothes get more creased in the line from which they hang, and thus are useful only for some kinds of clothes. The surface of the bar is striated all along for providing a non-slipping finishing to avoid falling of clothes. When using a frame instead of a tall drawer, the suspending clothes tend to protrude outwards when the system is overloaded. FIG. 23 shows two different pieces that can be added to the frame to keep the clothes within the space of the system. A bent wire 17 has a pair of hooks for hanging it from frame 13, while plate 18 has some drills for being screwed to the frame.

In FIG. 22 a version of the preceding system is illustrated in which the bars can alternatively be fitted in the rails from both above or under the frame. The bar 2 has got three hooks 4, two of them are put together and facing opposite to each other while the third one is at the other end of the bar. In this case front rails 14 and back rails 15 are different pieces in which the upper and lower rails are integrated. The bar 2 includes a handle 16 for an easier holding when fitting it from under the rails. In deep closets the rails can be mounted on the side walls of the frame or drawer, thus being perpendicular to the closet front panels.

The preceding bar systems can be alternatively used as trouser hangers of the usual type in which trousers are hanging all the way down, although they are not the best option in the market for such specific use. If any trouser hanger with sliding bars was already available in the market, it would probably be useful as an embodiment of the present invention, which in such case should be regarded as a new use of said trouser hanger.

FIGS. 13 to 17 show some other solutions of the clothes-filing hangers. The bar 2 in FIG. 13 is just a straight piece without any union means, like those of FIG. 9. The bar 2 shown in FIG. 14 has got hooks 4 in both ends and is a practical option for making thin metal hangers of about 5mm of diameter. Towels, sheets, underwear and even T-shirts can be suspended with this kind of thin bar for space saving despite the stronger creasing of the cloth already mentioned. The bar 2 shown in FIG. 15 has got a pair of grooved wheels 5. These wheels could have indentations inside the groove to run on rails having also indentations, so that both wheels of the bar are forced to move same distances along both rails. The bar has no union means in the version of FIG. 16 where it is meant to be fitted in a second elongated support piece or bridge 6 that rides along the rails. Said bridge has got slots 7 or other union means in both ends wherein the bar 2 is fitted. The bridge has got small wheels 8 that are meant for riding inside rails of the kind of curtain rails, so that the bridge rides along them but cannot be detached. Both bar and bridge provide a clamping effect on the piece of cloth that is specially useful for a further improved pants hanger. In FIG. 17 a folded piece of sheet metal is shown as another way of making a bar 2 with hooks 4 in both ends. In many cases the union means could be some plastic caps to be fitted in both ends of the bar.

Some improvements can be added to the rails, like those in FIG. 20 wherein a profile is shown in cross section including a flange working as the rail 3 and two other flanges more. Inclining flange 10 is meant for guiding the bar 2 towards the rail when being fitted. Horizontal flange 11 is meant to

stop the bar if falling from the rail or to avoid direct contact between suspending clothes and rails in cases where this can dirty them.

For closet organizing systems using vertical standards and brackets, the system according to this invention can be adapted by simply joining the frame with runners to said brackets.

- 5 For closet organizing systems including basket-like drawers made of wire, a simple and economical solution consists in fixing a pair of rails directly to the frame of a tall drawer.

- Movable racks on wheels can be composed including a fixed bar system or a clothes rod on top and a pull-out bar system underneath. Such racks are useful in combination with many closet systems and also as a disorder-proof shop display in which the suspending clothes may be protected with a plastic cover and stored optionally through the end of the rails instead of doing it from above.
- 10

Pull-out bar systems are specially practical when mounted in the low part of a chest of drawers.

Trunks that might be used as seatings can include the invention by simply adding a pair of Z-shape rails 12 of FIG. 21 to their side walls.

- Some already existing solutions within usual clothes hangers, like clamping members, second adjacent rods or wires, depending elements or hooks, etc, may be useful within the present invention.
- 15
- Also a usual clothes hanger in which the horizontal bar is a removable hanger of the invention makes a flexible combination.

- Already mentioned extendible frames can be adjusted to match any available space in the closet but are also practical in some cases for extending the system when overloaded, for example in an extendible rack on wheels for shop display.
- 20

The present method of folding and storing clothes could be used along with other basic embodiments of the hanger system, like with bars that are fitted in vertical parallel standards instead of horizontal rails, or with bars that are supported from only one of their ends.

- This method and described embodiments are also useful within related industrial logistics and stocks, through which clothes can be handled and marketed in a way following this invention.
- 25

While forms of the systems and hangers herein described constitute preferred embodiments of the invention in association with the described method, it is to be understood that the invention is not limited to the precise forms described, and that changes may be made without departing from the scope and spirit of the invention.

CLAIMS

1. A method of storing garments and other pieces of cloth, like T-shirts, sweaters, pants, towels, sheets, and the like, comprising:
- 5 • a piece of cloth,
 • a detached and elongated support piece,
 and the following steps:
- the piece of cloth is generally spread on a flat surface.
 • it is folded to have a width slightly smaller than the length of the elongated support piece,
- 10 • the elongated support piece is positioned onto the piece of cloth approximately in the centre and with both ends projecting outwards from the piece of cloth,
 • which is folded around the elongated support piece and
 • both of them are raised up with the elongated support piece in horizontal position and the piece of cloth thus suspending from both sides of the elongated support piece in preferably same portions.
- 15 and
 • are stored by removeably securing or positioning the elongated support piece horizontally through at least one of its ends.
2. The method of claim 1, further comprising a pair of horizontal, parallel and levelled elongated supports onto which the elongated support piece is removeably secured or positioned with each end on
- 20 each elongated support and being able to ride along them.
3. The method of claim 2, further comprising union means for removeably securing the elongated support piece to said elongated supports.
4. The method of claim 1, in which the piece of cloth has got sleeves and is folded as usual with the sleeves on its back before said folding of it around the elongated support piece.
- 25 5. The method of claim 1, in which the piece of cloth is a pair of long pants or trousers and is folded to have a length at least slightly shorter than $\frac{2}{3}$ of the pants length, before said folding of it around the elongated support piece.
6. A clothes storing system comprising:
- at least one detachable and elongated support piece from which a piece of cloth can be suspended
- 30 and
 • a pair of parallel and elongated supports on which said elongated support piece is horizontally positioned with each end on each elongated support.
7. The clothes storing system of claim 6, further comprising union means for removeably securing the elongated support piece to said elongated supports.
- 35 8. The clothes storing system of claim 6, wherein said elongated supports are horizontal, levelled and suitably shaped for the elongated support piece to ride along them.

9. The clothes storing system of claim 7, further comprising a second elongated support piece or bridge to which the elongated support piece is removeably secured, being said bridge secured to the elongated supports.

10. A clothes hanger that consists in a detached and elongated support piece including:

- 5
- a generally straight central portion, like a piece of rod, bar, tube, stick, plate, profile, and the like, from which a piece of cloth can be suspended
 - and union means in at least one end of the elongated support piece for removeably securing the elongated support piece horizontally to at least one rail or standard.

10 11. The clothes hanger of claim 10, wherein said union means are included in both ends of the elongated support piece for removeably securing it horizontally to a pair of parallel rails or standards.

12. The clothes hanger of claim 11, in which said union means are a pair of notches next to both ends of the elongated support piece.

13. The clothes hanger of claim 11, in which said union means are a pair of hooks.

15 14. The clothes hanger of claim 13, which is entirely made of a piece of metal rod or sheet metal including bent or curved portions forming said hooks.

15. The clothes hanger of claim 10, wherein said union means are one or more caps added to the central portion.

AMENDED CLAIMS

[received by the International Bureau on 06 January 2004 (06.01.04);
original claims 1-15 replaced by new claims 1-5 (1 page)]

CLAIMS

1. A method of storing garments and other pieces of cloth, like T-shirts, sweaters, pants, towels, sheets, and the like, comprising:
- 5 • a piece of cloth,
- a detached and elongated support piece,
- and the following steps:
- the piece of cloth is generally spread on a flat surface,
- it is folded to have a width slightly smaller than the length of the elongated support piece,
- 10 • the elongated support piece is positioned onto the piece of cloth approximately in the centre and with both ends projecting outwards from the piece of cloth,
- which is folded around the elongated support piece and
- both of them are raised up with the elongated support piece in horizontal position and the piece of cloth thus suspending from both sides of the elongated support piece in preferably same portions,
- 15 and
- are stored by removeably securing or positioning the elongated support piece horizontally through at least one of its ends.
2. The method of claim 1, further comprising a pair of horizontal, parallel and levelled elongated supports onto which the elongated support piece is removeably secured or positioned with each end on
- 20 each elongated support and being able to ride along them.
3. The method of claim 2, further comprising union means for removeably securing the elongated support piece to said elongated supports.
4. The method of claim 1, in which the piece of cloth has got sleeves and is folded as usual with the sleeves on its back before said folding of it around the elongated support piece.
- 25 5. The method of claim 1, in which the piece of cloth is a pair of long pants or trousers and is folded to have a length at least slightly shorter than 2/3 of the pants length, before said folding of it around the elongated support piece.

CLAIMS

- 5 1. A method of storing garments of the kind having sleeves, like T-shirts, sweaters and the like, comprising:
- a garment of said kind,
 - a detached and elongated support piece,
- and the following steps:
- 10 • the garment is generally spread on a flat surface,
- it is folded, as usual with the sleeves on its back, to have a width slightly smaller than the length of the elongated support piece,
 - the elongated support piece is positioned onto the garment approximately in the centre and with both ends projecting outwards from the garment,
- 15 • which is folded around the elongated support piece,
- both of them raised up with the elongated support piece in horizontal position and the garment thus suspending from both sides of the elongated support piece in preferably same portions, and
 - are stored by removably securing or positioning the elongated support piece horizontally through at least one of its ends.
- 20
2. A method of storing long pants or trousers, comprising:
- a trouser,
 - a detached and elongated support piece,
- and the following steps:
- 25 • the trouser is generally spread on a flat surface,
- it is folded to have a width smaller than the length of the elongated support piece,
 - it is folded again to have a length at least slightly shorter than $\frac{2}{3}$ of the trouser length,
 - the elongated support piece is positioned onto the trouser approximately in the centre and with both ends projecting outwards from the trouser,
- 30 • which is folded around the elongated support piece,
- both of them raised up with the elongated support piece in horizontal position and the trouser thus suspending from both sides of the elongated support piece in preferably same portions,
 - and are stored by removably securing or positioning the elongated support piece horizontally through at least one of its ends.

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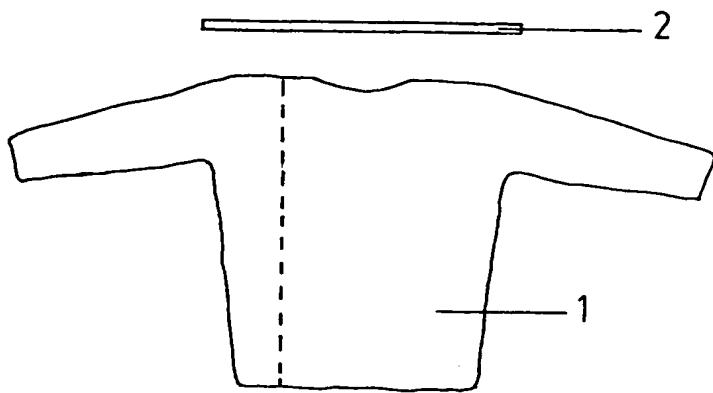


FIG. 1

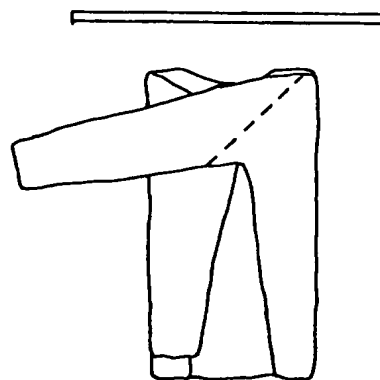


FIG. 4

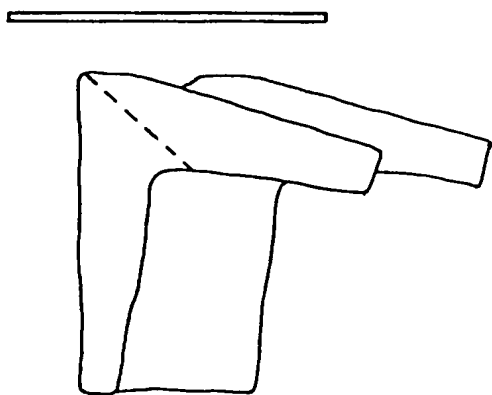


FIG. 2

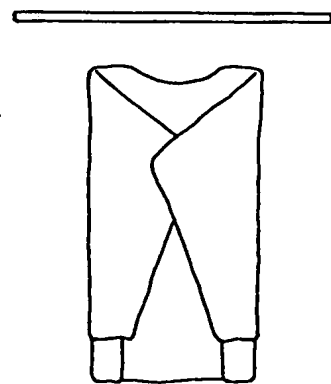


FIG. 5

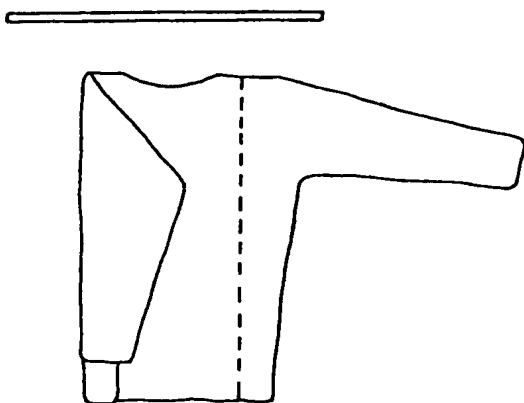


FIG. 3

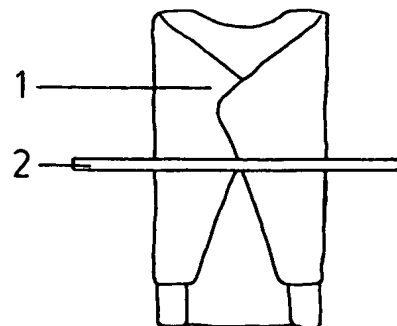


FIG. 6

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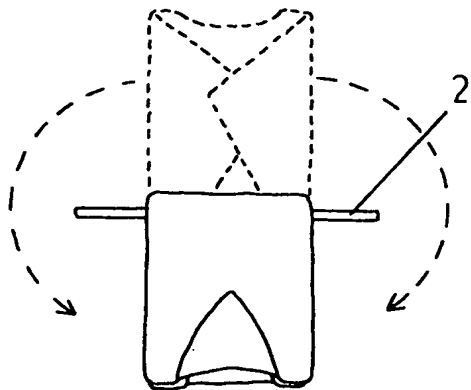


FIG. 7

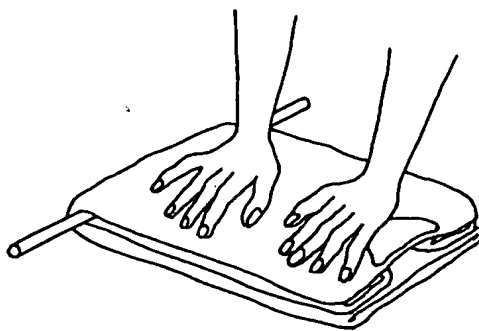


FIG. 8

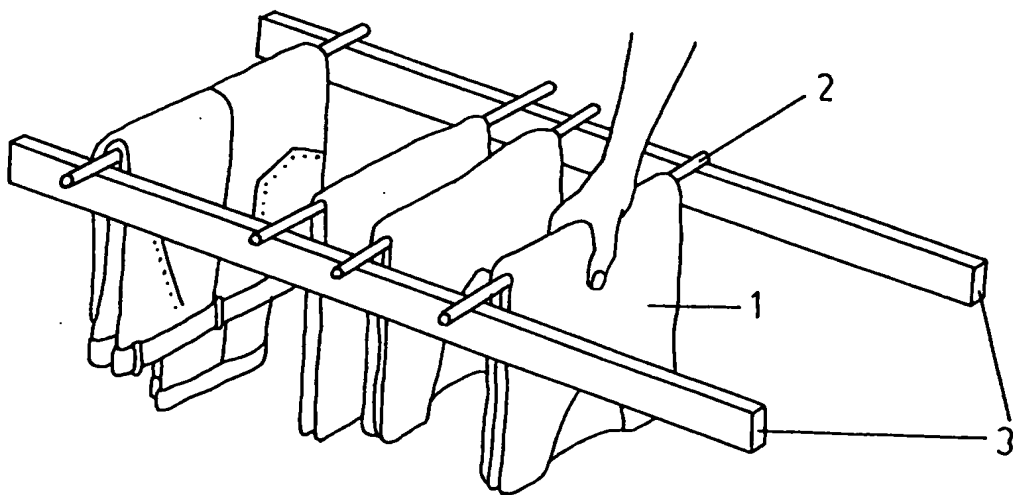


FIG. 9

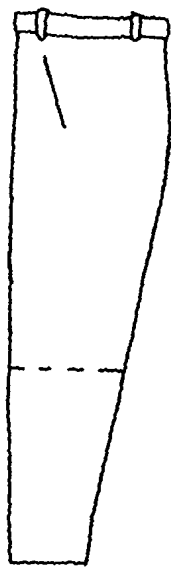


FIG. 10



FIG. 11

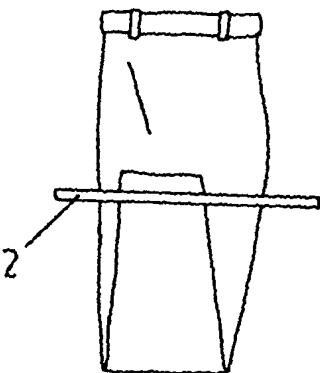


FIG. 12

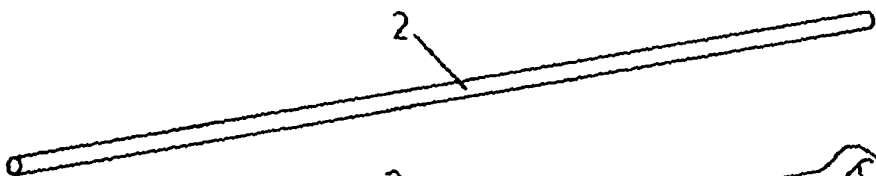


FIG. 13

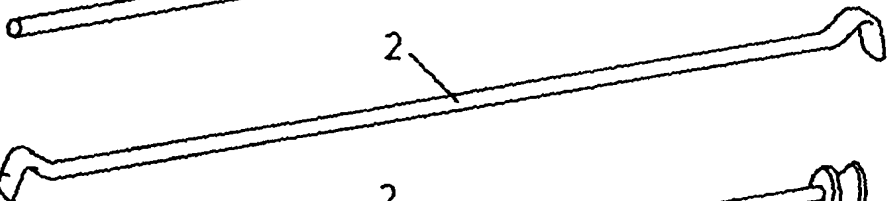


FIG. 14

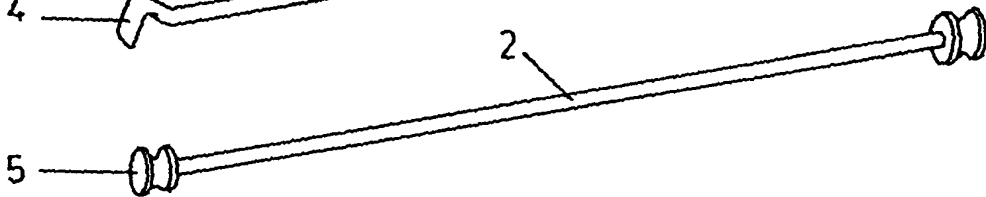


FIG. 15

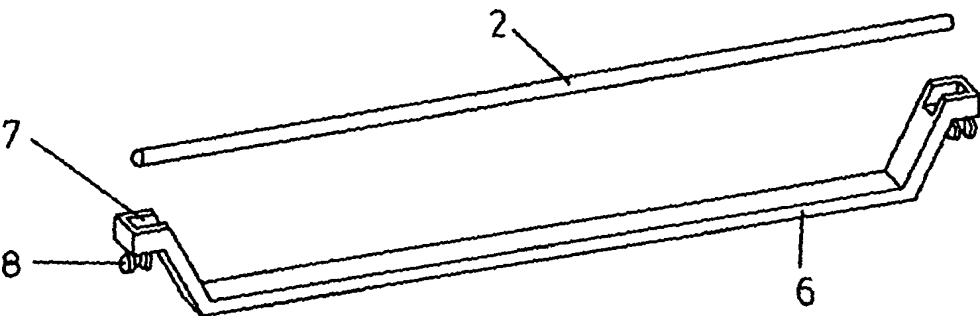


FIG. 16

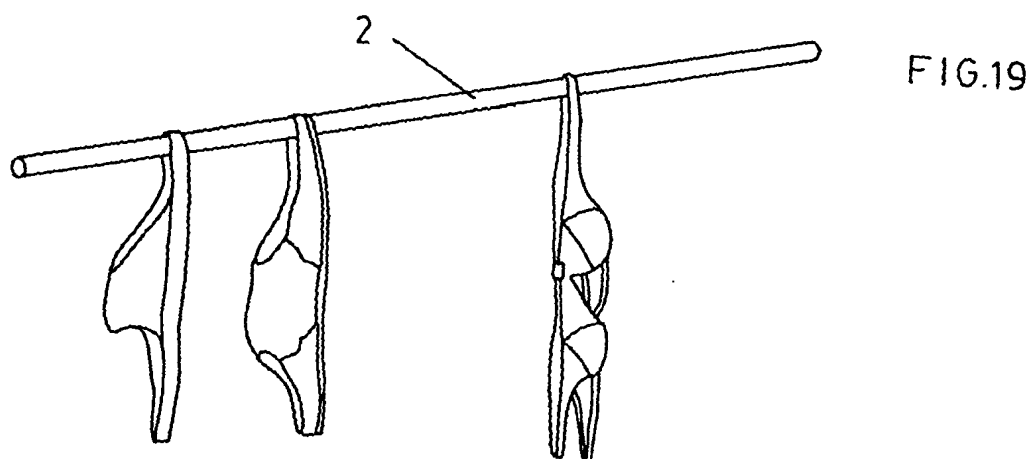
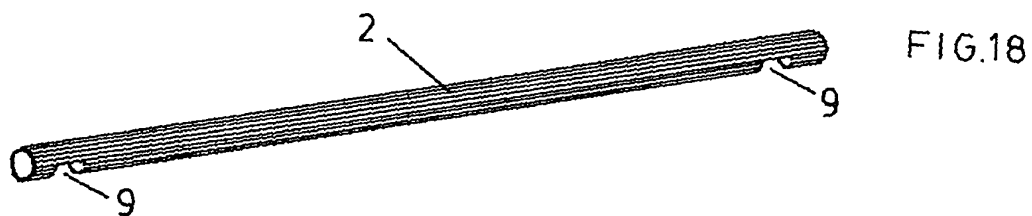
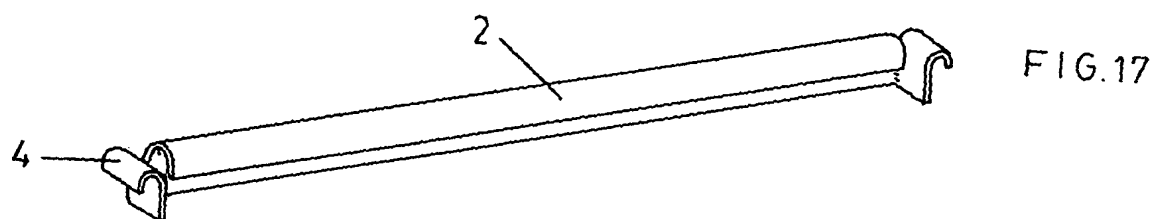
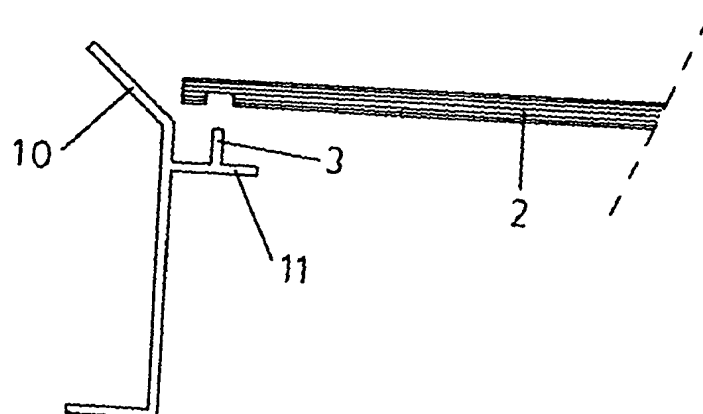
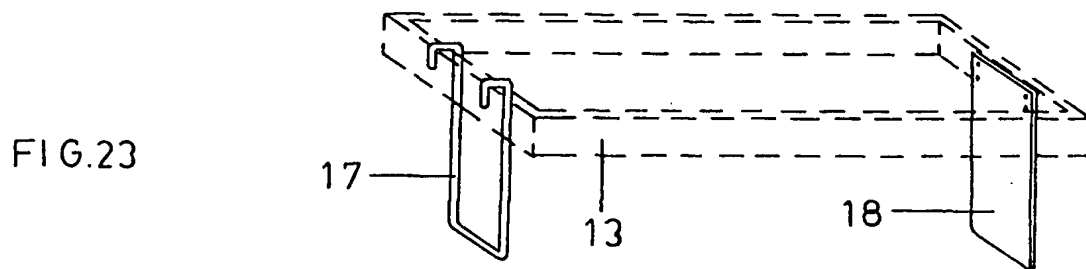
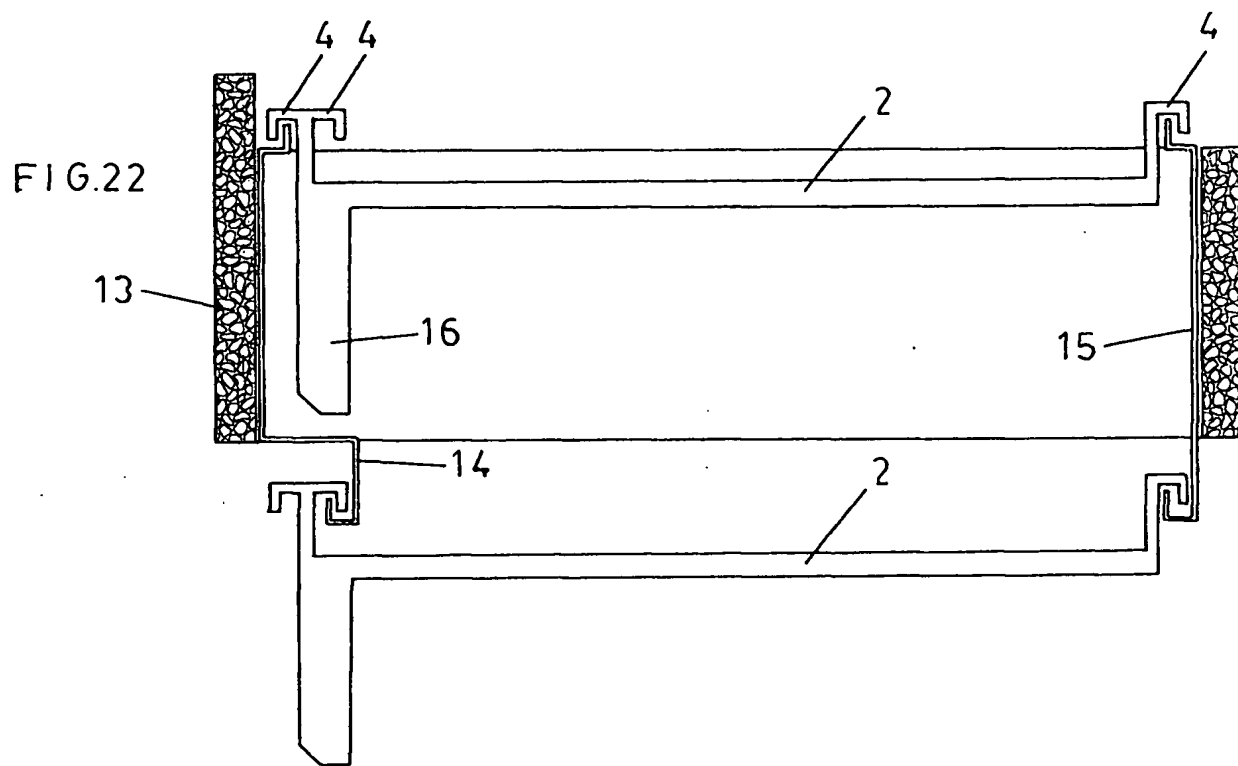
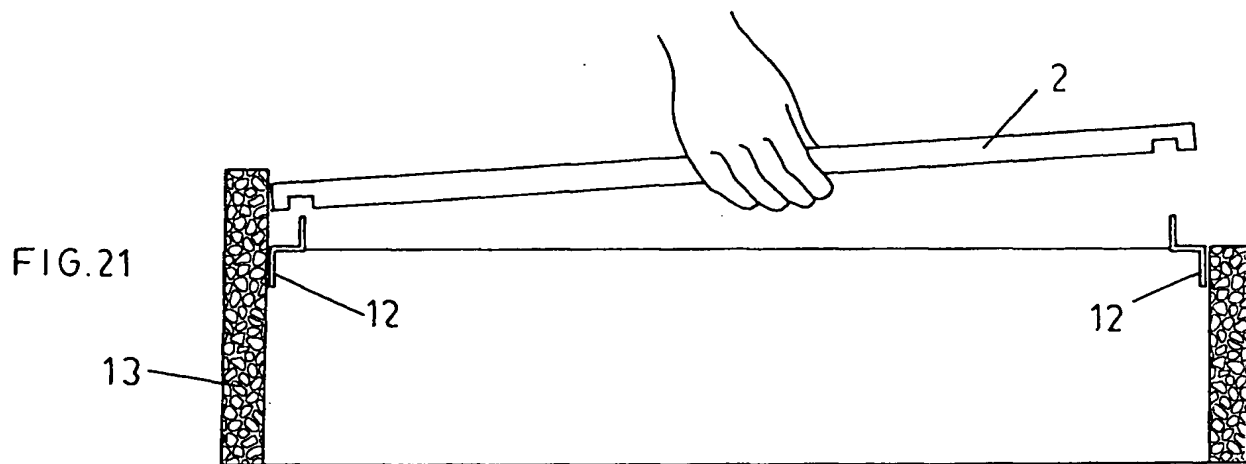


FIG. 20



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INTERNATIONAL SEARCH REPORT

PCT/03/03093

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A47F7/18 D06F89/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A47F D06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 4 579 262 A (KEENAN PAUL B ET AL) 1 April 1986 (1986-04-01) the whole document	6-8, 10, 11, 14 1-3
X	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 02, 2 April 2002 (2002-04-02) & JP 2001 299555 A (OTSUKA CHEM CO LTD), 30 October 2001 (2001-10-30) abstract	6-8, 10-12, 14
X	DE 44 11 908 A (HAJI HASCHEMI MOSTAFA) 14 December 1995 (1995-12-14) figures 1-5	6-8, 10, 11, 13, 14
A	DE 201 20 463 U (MUEMTAZ PIRI) 25 April 2002 (2002-04-25) abstract; figure 1	1, 4

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

G document member of the same patent family

Date of the actual completion of the international search

24 October 2003

Date of mailing of the international search report

06/11/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Pineau, A

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